

<u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Nashville 2960 Foster Creighton Road Nashville, TN 37204

Tel: 800-765-0980

TestAmerica Job ID: NUJ3360

Client Project/Site: PASUS-Dimock-AMEC-102011 Client Project Description: PASUS - VARIOUS SITES

For:

Cabot Oil Five Penn Center West, Suite 4101 Pittsburg, PA 1527641

Attn: Phillip Levasseur

Authorized for release by: 11/02/2011 04:49:12 PM

Ryan Fitzwater
Project Manager

Ryan.Fitzwater@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

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DIM0067043 DIM0067058

1 JOD ID. NOJ3360

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Sample Summary

Client: Cabot Oil

Project/Site: PASUS-Dimock-AMEC-102011

TestAmerica Job ID: NUJ3360

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
NUJ3360-01	Well 1	Water	10/25/11 10:10	10/26/11 07:35

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Case Narrative

Client: Cabot Oil TestAmerica Job ID: NUJ3360

Project/Site: PASUS-Dimock-AMEC-102011

Job ID: NUJ3360

Laboratory: TestAmerica Nashville

Narrative

WELL 0 10/25/11

1010 Ex. 6 - Personal Privacy 200.00-1,008.00,000.

Definitions/Glossary

Client: Cabot Oil TestAmerica Job ID: NUJ3360

Project/Site: PASUS-Dimock-AMEC-102011

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.						
#	Listed under the "D" column to designate that the result is reported on a dry weight basis						
%R	Percent Recovery						
CNF	Contains no Free Liquid						
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample						
EDL	Estimated Detection Limit						

EPA United States Environmental Protection Agency

MDL Method Detection Limit
ML Minimum Level (Dioxin)

ND Not detected at the reporting limit (or MDL or EDL if shown)

PQL Practical Quantitation Limit

RL Reporting Limit

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

stAmerica Nashville

Client: Cabot Oil

Project/Site: PASUS-Dimock-AMEC-102011

Client Sample ID: Well 1 Lab Sample ID: NUJ3360-01

Date Collected: 10/25/11 10:10 Matrix: Water

Date Received: 10/26/11 07:35

Method: RSK 175 - Methane, Ethane, and Ethene by GC - Dissolved											
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac		
Methane	ND		5.00		ug/L		10/27/11 12:30	10/27/11 13:31	1.00		
Ethane	ND		5.00		ug/L		10/27/11 12:30	10/27/11 13:31	1.00		
Propane	ND		5.00		ug/L		10/27/11 12:30	10/27/11 13:31	1.00		
Isobutane	ND		10.0		ug/L		10/27/11 12:30	10/27/11 13:31	1.00		
n-Butane	ND		5.00		ug/L		10/27/11 12:30	10/27/11 13:31	1.00		
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac		
Acetylene	107		62 - 124				10/27/11 12:30	10/27/11 13:31	1.00		

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TestAmerica Job ID: NUJ3360

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TestAmerica Job ID: NUJ3360

Project/Site: PASUS-Dimock-AMEC-102011

Method: RSK 175 - Methane, Ethane, and Ethene by GC

Lab Sample ID: 11J6413-BLK1

Lab Sample ID: 11J6413-BS1

Matrix: Water

Matrix: Water

Client: Cabot Oil

Analysis Batch: U018963

Client Sample ID: Method Blank **Prep Type: Dissolved**

Prep Batch: 11J6413_P

	DIAIIK	DIAIIK						
Analyte	Result	Qualifier	RL MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.00	ug/L		10/27/11 12:30	10/27/11 13:05	1.00
Ethane	ND	5	5.00	ug/L		10/27/11 12:30	10/27/11 13:05	1.00
Propane	ND	5	5.00	ug/L		10/27/11 12:30	10/27/11 13:05	1.00
Isobutane	ND		10.0	ug/L		10/27/11 12:30	10/27/11 13:05	1.00
n-Butane	ND	5	5.00	ug/L		10/27/11 12:30	10/27/11 13:05	1.00

Blank Blank

Blank Blank

% Recovery Qualifier Surrogate Limits Prepared Analyzed Dil Fac 62 - 124 Acetylene 105 10/27/11 12:30 10/27/11 13:05 1.00

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 11J6413 P

Analysis Batch: U018963 LCS LCS Spike % Rec. Analyte Result Qualifier Unit D %Rec Limits Added Methane 80 - 120 273 264 ug/L 97 Ethane 512 495 ug/L 97 80 - 120 Propane 762 708 ug/L 93 80 - 120 993 80 - 120 Isobutane 941 ug/L 95 n-Butane 993 948 80 - 120 ug/L

LCS LCS

Limits Surrogate % Recovery Qualifier Acetylene 104 62 _ 124

Lab Sample ID: 11J6413-MS1

Matrix: Water

Analysis Batch: U018963

Client Sample ID: Well 1 **Prep Type: Dissolved** Prep Batch: 11J6413_P

Client Sample ID: Well 1

Prep Type: Dissolved

	Sample	Sample	Spike	Matrix Spike	Matrix Spil	ke			% Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Methane	ND		273	273	×	ug/L		100	46 - 142	
Ethane	ND		512	500		ug/L		98	71 - 120	
Propane	ND		762	715		ug/L		94	70 - 130	
Isobutane	ND		993	955		ug/L		96	70 - 130	
n-Butane	ND		993	961		ug/L		97	70 - 130	

Matrix Spike Matrix Spike

ND

Surrogate % Recovery Qualifier Limits Acetylene 108 62 - 124

Lab Sample ID: 11J6413-MSD1

Matrix: Water

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								Prep Batch	n: 11J6	413_P
Sample	Sample	Spike	∕latrix Spike Dup	Matrix Spi	ke Dur			% Rec.		RPD
Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
ND		273	274	0-	ug/L		100	46 - 142	0.4	33
ND		512	501		ug/L		98	71 - 120	0.3	30
ND		762	714		ug/L		94	70 _ 130	0.1	30
ND		993	946		ug/L		95	70 - 130	1	30
	Result ND ND ND	ND ND	Result Qualifier Added ND 273 ND 512 ND 762	Result Qualifier Added Result ND 273 274 ND 512 501 ND 762 714	Result Qualifier Added Result Qualifier ND 273 274 ND 512 501 ND 762 714	Result Qualifier Added Result Qualifier Unit ND 273 274 ug/L ND 512 501 ug/L ND 762 714 ug/L	Result ND Qualifier Added A	Sample Sample Spike Vlatrix Spike Dup Matrix Spike Dup Result Qualifier Added Result Qualifier Unit D %Rec ND 273 274 ug/L 100 ND 512 501 ug/L 98 ND 762 714 ug/L 94	Sample Sample Spike Vlatrix Spike Dup Matrix Spike Dup Matrix Spike Dup % Rec. Result Qualifier Added Result Qualifier Unit D % Rec. ND 273 274 ug/L 100 46 - 142 ND 512 501 ug/L 98 71 - 120 ND 762 714 ug/L 94 70 - 130	Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD ND 273 274 ug/L 100 46 - 142 0.4 ND 512 501 ug/L 98 71 - 120 0.3 ND 762 714 ug/L 94 70 - 130 0.1

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ug/L

2

70 - 130

95

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993

DIM0067043

n-Butane

QC Sample Results

Client: Cabot Oil TestAmerica Job ID: NUJ3360

Project/Site: PASUS-Dimock-AMEC-102011

Method: RSK 175 - Methane, Ethane, and Ethene by GC (Continued)

Lab Sample ID: 11J6413-MSD1 Matrix: Water

Analysis Batch: U018963

Matrix Spike Dup Matrix Spike Dup

 Surrogate
 % Recovery
 Qualifier
 Limits

 Acetylene
 101
 62 - 124

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Client Sample ID: Well 1

Prep Type: Dissolved

Prep Batch: 11J6413_P

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QC Association Summary

Client: Cabot Oil

TestAmerica Job ID: NUJ3360 Project/Site: PASUS-Dimock-AMEC-102011

Pesticides

Analysis Batch: U018963

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11J6413-BLK1	Method Blank	Dissolved	Water	RSK 175	11J6413_P
11J6413-BS1	Lab Control Sample	Dissolved	Water	RSK 175	11J6413_P
11J6413-MS1	Well 1	Dissolved	Water	RSK 175	11J6413_P
11J6413-MSD1	Well 1	Dissolved	Water	RSK 175	11J6413_P
NUJ3360-01	Well 1	Dissolved	Water	RSK 175	11J6413_P

Prep Batch: 11J6413_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11J6413-BLK1	Method Blank	Dissolved	Water	RSK 175/3810	· · · · · · · · · · · · · · · · · · ·
11J6413-BS1	Lab Control Sample	Dissolved	Water	RSK 175/3810	
11J6413-MS1	Well 1	Dissolved	Water	RSK 175/3810	
11J6413-MSD1	Well 1	Dissolved	Water	RSK 175/3810	
NUJ3360-01	Well 1	Dissolved	Water	RSK 175/3810	

TestAmerica Job ID: NUJ3360

Project/Site: PASUS-Dimock-AMEC-102011

Lab Sample ID: NUJ3360-01 Client Sample ID: Well 1

Date Collected: 10/25/11 10:10 Matrix: Water Date Received: 10/26/11 07:35

		Batch	Batch		Dilution	Batch	Prepared		
1	Ргер Туре	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Ī	Dissolved	Prep	RSK 175/3810	-	1.00	11J6413_P	10/27/11 12:30	JLS2	TAL NSH
1	Dissolved	Analysis	RSK 175		1.00	U018963	10/27/11 13:31	JLS2	TAL NSH

Laboratory References:

Client: Cabot Oil

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Road, Nashville, TN 37204, TEL 800-765-0980

DIM0067067

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DIM0067043

Method Summary

Client: Cabot Oil

Project/Site: PASUS-Dimock-AMEC-102011

TestAmerica Job ID: NUJ3360

Method	Method Description	Protocol	Laboratory
RSK 175	Methane, Ethane, and Ethene by GC	3 2	TAL NSH

Protocol References:

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Road, Nashville, TN 37204, TEL 800-765-0980

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TestAmerica Job ID: NUJ3360

Client: Cabot Oil Project/Site: PASUS-Dimock-AMEC-102011

_aboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Nashville		ACIL		393
estAmerica Nashville	A2LA	ISO/IEC 17025		0453.07
estAmerica Nashville	A2LA	WY UST		453.07
estAmerica Nashville	AIHA - LAP	IHLAP		100790
estAmerica Nashville	Alabama	State Program	4	41150
estAmerica Nashville	Alaska	Alaska UST	10	UST-087
estAmerica Nashville	Arizona	State Program	9	AZ0473
stAmerica Nashville	Arkansas	State Program	6	88-0737
estAmerica Nashville	CALA	CALA		3744
estAmerica Nashville	California	NELAC	9	1168CA
estAmerica Nashville	Colorado	State Program	8	N/A
estAmerica Nashville	Connecticut	State Program	1	PH-0220
estAmerica Nashville	Florida	NELAC	4	E87358
estAmerica Nashville	Illinois	NELAC	5	200010
estAmerica Nashville	Iowa	State Program	7	131
estAmerica Nashville	Kansas	NELAC	7	E-10229
estAmerica Nashville	Kentucky	Kentucky UST	4	19
estAmerica Nashville	Kentucky	State Program	4	90038
estAmerica Nashville	Louisiana	NELAC	6	30613
estAmerica Nashville	Louisiana	NELAC	6	LA100011
estAmerica Nashville	Maryland	State Program	3	316
estAmerica Nashville	Massachusetts	State Program	1	M-TN032
estAmerica Nashville	Minnesota	NELAC	5	047-999-345
estAmerica Nashville	Mississippi	State Program	4	N/A
estAmerica Nashville	Montana	MT DEQ UST	8	NA
estAmerica Nashville	New Hampshire	NELAC	1	2963
estAmerica Nashville	New Jersey	NELAC	2	TN965
estAmerica Nashville	New York	NELAC	2	11342
estAmerica Nashville	North Carolina	North Carolina DENR	4	387
estAmerica Nashville	North Dakota	State Program	8	R-146
estAmerica Nashville	Ohio	OVAP	5	CL0033
estAmerica Nashville	Oklahoma	State Program	6	9412
estAmerica Nashville	Oregon	NELAC	10	TN200001
estAmerica Nashville	Pennsylvania	NELAC	3	68-00585
estAmerica Nashville	Rhode Island	State Program	1	LAO00268
estAmerica Nashville	South Carolina	State Program	4	84009
estAmerica Nashville	South Carolina	State Program	4	84009
estAmerica Nashville	Tennessee	State Program	4	2008
estAmerica Nashville	Texas	NELAC	6	T104704077-09-TX
estAmerica Nashville	USDA	USDA		S-48469
estAmerica Nashville	Utah	NELAC	8	TAN
estAmerica Nashville	Virginia	NELAC Secondary AB	3	460152
estAmerica Nashville	Virginia	State Program	3	00323
estAmerica Nashville	Washington	State Program	10	C789
estAmerica Nashville	West Virginia	West Virginia DEP	3	219

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

THE LEADER IN ENVIRONMENTAL TESTING

Nashville, TN

COOLER REC

NUJ3360

Cooler Received/Opened On 10/26/2011 @ 0735	NUJ3360				
1. Tracking # 3933 (last 4 digits, FedEx)					
Courier: FedEx IR Gun ID 97460373					
2. Temperature of rep. sample or temp blank when opened: 2.5 Degrees Celsius					
3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO					
4. Were custody seals on outside of cooler?	€SNONA				
If yes, how many and where:					
5. Were the seals intact, signed, and dated correctly?	@snona				
6. Were custody papers inside cooler?	YESNONA				
Leartify that I opened the cooler and answered questions 1-6 (intial)					
7 Were custody seals on containers: YES NO and Intact	YESNO. NA				
Were these signed and dated correctly?	YESNONA				
8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None					
9. Cooling process: (ce) Ice-pack Ice (direct contact) Dry ice	Other None				
10. Did all containers arrive in good condition (unbroken)?	YES NO NA				
1°. Were all container labels complete (#, date, signed, pres., etc)?	VES NO NA				
12. Did all container labels and tags agree with custody papers?	YES NONA				
13a. Were VOA vials received?	YESNONA				
b. Was there any observable headspace present in any VOA vial?	YES NO NA				
14. Was there a Trip Blank in this cooler? YES NO NA If multiple coolers, sequence #					
I certify that I unloaded the cooler and answered questions 7-14 (intial)					
15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YESNQNA					
b. Did the bottle labels indicate that the correct preservatives were used	YES NO NA				
16. Was residual chlorine present?	YESNO. (NA				
I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial)	DA				
17. Were custody papers properly filled out (ink, signed, etc)?	YES NONA				
18. Did you sign the custody papers in the appropriate place?	YES NONA				
19. Were correct containers used for the analysis requested?	YES NO NA				
20. Was sufficient amount of sample sent in each container?	YESNONA				
I certify that I entered this project into LIMS and answered questions 17-20 (intial)					
Leertify that I attached a label with the unique LIMS number to each container (intial)					
21. Were there Non-Conformance issues at login? YES. NO Was a PIPE generated? YES. NO.#					

NUJ3360 11/07/11 23:59

TestAmerica Laboratory location: Pittsburgh --- 301 Alpha Drive / Pittsburgh, PA 15238 / 412-963-7058 AMEC Carter T DW Other NPDES RCRA Regulatory program: Client Contact TestAmerica Laboratories, Inc. Company Name: Lab Contact: Client Project Manager: Site Contact: Cabot Oil & Gas Corporation Ryan Hall / Ryan Fitzwater Phillip Levasseur Chris Husted Address: Telephone: Telephone: Telephone: 5 Penn Center West 610-828-8100 412-302-3836/615-301-5757 COCs 412-249-3921 Tity/State/Zip: Analysis Turnaround Time Analyses For lab use only Email: Pittsburgh, PA 15276 phillip levasseur@cabotog.com RSK 175 Methane, Ethane & Propar TSS Walk-in client TAT if different from below 412-249-3921 , Bromide, ALK, TDS, TS 3 weeks 8260B, Voas BTEX Plus (TCE) Project Name (PAD): PASUS-Dimock-Amec-102011 200.8 Metals & 245.1 Mercury ₩ 2 weeks Lab sampling 1664A HEM, Oil & Grease 1 week Method of Shipment/Carrier: TAX MAP ID: 200.00-1,008.00,000 Composite=C / Grab=G Filtered Sample (Y / N) Ethylene Glyols 2 days 1 day Job/SDG No Shipping/Tracking No: PO # Matrix Containers & Preservatives CI, SO4, Turbidity, Sediment Sample Specific Notes / 8015B 112804 Unpres MBAS HN03 NaOH Solid Special Instructions: Σ Sample Date | Sample Time Sample Identification X N G 3 Well 1 1010 X Page 4 of Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Possible Hazard Identification Return to Client Disposal By Lab Poison B Unknown Archive For Skin Irritant Flammable Special Instructions/QC Requirements & Comments: Landowner EDD Lab Report r Level in Data Package sent to Phillip Levasseur, Cabot Oil & Gas Corporation, 5 Penn Center West, Pittsburgh, PA 15276. (412) 249-3921 and Doug Newton, AMEC Environment & Infrastructure, 502 West Germantown Pike, Plymouth Meeting, PA 19462. (610) 828-8100 empany Received by 'ompany Date Time Relinquished by: AMEC Received by Date Time Relinquished by 'ompany Company Company: ompany Date Time Relinquished by 16.26110735 TEMP 2.5 America Laboratories, Inc. All rights reserved

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